



V. IMPLEMENTATION

Implementation of this CCP will depend on the full involvement of Refuge staff, support staff, cooperating partners, and volunteers. However, in recognition of the fiscal atmosphere under which Federal agencies operate, it is recognized that optimal funding to carry out the various Refuge programs may not be realistic. Therefore, rather than layout a detailed scenario and budget for implementation of each Refuge operational component and project, we have chosen instead to provide a general overview of future Refuge programs and projects and leave the details of scheduling and budgets to be developed as funding levels and staffing patterns become clearer. A description of each project follows in section 2.2 (Figure 15), as does a table that describes annual funding needs (section 2.3).

1. TOOLS

1.1 Staffing Patterns

Obtaining the necessary staff to implement the CPP will be essential to realizing the Refuge vision in 15 years. Table 5 reflects the staff needed to fully implement the action items and projects in this CCP.

Table 5 Future Staffing Needs Necedah National Wildlife Refuge	
Refuge Manager	1.0 FTE
Refuge Operations Specialist	2.0 FTE
Refuge Operations Specialist	1.0 FTE
Biologist	1.0 FTE
Biologist*	1.0 FTE
Park Ranger	1.0 PPT
Park Ranger	1.0 PFT
Park Ranger(LE)*	1.0 PFT
Fire Management Officer	1.0 FTE
Biological Technician	1.0 FTE
Biological Technician	1.0 EFF
Forestry Technician	.4 TFT
Administrative Technician	1.0 FTE
Maintenance Mechanic	1.0 FTE
Maintenance Worker*	1.0 FTE
Equipment Operator	1.0 FTE
Student Trainee	.33 TFT
Office Automation Clerk	1.0 P-INT
Office Automation Clerk*	.6 PPT
* indicates new position	



1.2 Step-Down Management Plans

Step-down management plans are an important component of the day-to-day management of national wildlife refuges. They are designed (in most cases) to provide detailed guidance on refuge management areas (e.g., habitat, public use, fire, safety, new construction, etc.) or groups of related subjects. Step-down management plans describe strategies and implementation schedules for meeting CCP goals and objectives. In other cases, step-down management plans provided a general framework for CCP actions.

Table 6 illustrates the plans that will be employed in support of the goals and objectives set forth in this document, either in their current or updated form.

Table 6 Step-down Management Plans Necedah National Wildlife Refuge		
<u>Step-Down Plan</u>	<u>Last Revised</u>	<u>Current Status</u>
Refuge Management Plan, Parts 1 & 2	01/05/87	Replaced by the CCP
Refuge Management Plan, Part 3	09/15/89	Replaced by the CCP
Forest Management Plan	07/29/94	Review and revise
Marsh and Water Management Plan	06/24/92	Review and revise
Cropland Management Plan	11/24/86	Review and revise
Grassland Management Plan	05/03/88	Review and revise
Fire Management Plan	01/06/87	Review and revise
Public Use Plan	12/05/79	Review and revise
Sign Plan	02/17/88	Review and revise
Law Enforcement Plan	01/07/86	Review and revise
Fur Management Plan	03/11/88	Review and revise
Disease Contingency Plan	07/24/87	Review and revise
Integrated Pest Management Plan		To be developed
Cultural Resource Management Plan		To be developed

1.3 Partnerships

Partnerships with federal, state, and local agencies; private organizations; and individuals will be essential to the successful implementation of this CCP. Refuge staff will seek out partnerships to fulfill the goals and objectives outlined in this plan and create the desired future habitat condition illustrated by Figure 14. Natural resource issues extend beyond social and political boundaries. Stakeholders with a variety of interests and backgrounds need to be included in the day-to-day management of the Refuge, and take ownership in its development.

Voluntary participation from private landowners will be an essential part of the Refuge's new focus in the Yellow River area. Nearly all the land in the Yellow River area is in private ownership. In fact, nearly 70 percent of all available fish and wildlife habitat in the United States is in private ownership. With increased demographic trends toward urbanization and



suburbanization, there is a tendency for people to lose touch with the land and the goods and services it provides. The Refuge's approach to sustainable management of public and private land will be to actively support a network of lands and waters dedicated to fish, wildlife, and plant conservation. This means that partnerships are not only desirable for accomplishing Refuge objectives, they are necessary.

Also, natural resources do not organize themselves according to political boundaries. Clean air and water, sustainable populations of wildlife and plants, and positive aesthetic and recreational experiences are a community-wide effort involving multiple Federal, state, and local jurisdictions. The Refuge will support other governmental agencies, private organizations and industries, and private landowners in managing natural resources in ways that enhance Service Trust Resources for present and future generations. The Refuge will contribute staff expertise, equipment, and monetary resources, where possible, to individuals and groups requesting assistance with:

- Sustainable timber management
- Game management
- Habitat management
- Conducting rare species inventories
- Water management, including wetland restorations, water level management, and water quality issues
- Real estate transfers and easement information
- Education and outreach

1.4 Volunteer Program

The Refuge's volunteer program is vital to the fulfillment of the Refuge's vision. Volunteers assist the Refuge with fish and wildlife management, habitat management, education and outreach, administration, and maintenance - in other words, in nearly every aspect of the Refuge's operation. In 1998, volunteers contributed over 7,000 hours at the Refuge. Some volunteer projects have included:

- Tracking pileated woodpeckers using radio telemetry
- Building new Refuge hiking trails
- Assisting with the Wisconsin Federal Junior Duck Stamp Contest
- Burning brush piles for the Refuge's savanna restorations
- Creating a savanna demonstration area in proximity to the Refuge Headquarters

1.5 Land Acquisition

Land acquisition is one method the Refuge will use to facilitate restoration and preservation of the Yellow River Focus Area (Figure 11). With the completion of this CCP and associated environmental assessment, the Refuge will be positioned to purchase conservation easements and fee simple purchases from willing sellers. All land acquisition will occur from willing sellers only. The Refuge will not use eminent domain or condemnation to acquire any land in the Yellow River Focus Area. It should be noted that the Service did not request money for land acquisition for the years 2000, 2001, or 2002. It is anticipated that the Service will request land acquisition money for fiscal year 2003. The attached EA contains additional information about the Yellow River Focus Area.



2. BUDGET AND SCHEDULE

2.1 Station Budget

The costs to implement the objectives, strategies, and projects identified in this CCP are captured in Service budget databases, including the Refuge Operating Needs System (RONS), Maintenance Management System (MMS), and Land Acquisition Priority System (LAPS). However, obtaining additional operating funds for the Refuge will be the single most important part of implementing this CCP. Table 7 illustrates a typical annual budget for the Refuge.

Table 7 Annual Refuge Budget Necedah National Wildlife Refuge		
COST CODE	CATEGORY	AMOUNT
1261	Operations and Maintenance - Volunteer - Massasauga Headstarting Program - Junior Duck Stamp - Eau Claire County Restoration - Clark County Restoration - Monroe County Restoration - Chippewa County Restoration - NFD - Harvey's Pond	\$511,419 \$4,500 \$5,000 \$1,450 \$5,000 \$2,400 \$2,000 \$2,000 \$4,000
1262	Maintenance Management System - Safety - Fire lanes/Access Roads	\$23,700 \$40,000
9251	Fire (Pre-suppression) - Administrative Supply - Equipment/Facility - Fire Management Officer - FMO Travel - Physical Exams - Emergency Firefighters	\$11,903 \$10,000 \$57,913 \$5,000 \$2,500 \$13,096
9263	Fire (Prescribed) - Boundary Lines - Prairie/Savanna Restoration	\$2,400 \$12,753
1121	- Habitat Restoration - Technical Assistance	\$22,000 \$4,000
1230	- Migratory Birds	\$400
4960	- User Fees	\$30
8555	- Department of Transportation	\$37,100



	Contributed Funds (not budgeted)	
7201-0414		\$1,000
7201-0311		\$1,150
7201-0312		\$168

2.2 Projects

Habitat Restoration and Management Projects

1. Restore two additional wetland complexes (app. 1,000 acres)(Figure 15) on the Refuge to provide migration and breeding habitat for water birds (Low Priority) (2006-2009).

A large portion of the Refuge was drained in the early 20th century. The hydrology has been restored on about half of the original wetland acreage. These restorations will be accomplished by blocking existing ditches and installing water control structures. Some existing impoundments could also be managed more efficiently with the addition of water control structures. The engineering ditch plugs and water control structures will be completed by seasonal Refuge staff and private contractors. Estimated Cost: \$162,000

2. Sub-divide Sprague-Mather Pool (the largest impoundment on the Refuge)(Figure 15) into three units which can be managed and drawn-down independently for moist soil food production and/or invertebrate availability for migrating waterfowl (High Priority) (2006 - 2010).

The Sprague-Mather Pool (1,400 acres) serves as a resting and feeding area for migratory waterbirds. This project will construct dikes and water control structures to sub-divide the pools into three sub-units which can be managed and drawn down independently for moist soil food production and/or invertebrate availability. This will allow more flexibility in the management of this impoundment and greatly increase the chances for success. U.S. Fish and Wildlife Service engineer will design the dikes and construction will be by a private contractor. Estimated Cost: \$1,169,000

3. Acquire and install staff water gauges for accurate water level readings (High Priority) (2002).

Nearly half of Refuge wetlands are in impoundments which have managed water levels. To fine tune the water level management for maximum benefit, it is necessary to have each water control structure surveyed to Mean Sea Level Elevation and have a staff water gauge installed for accurate water level readings. The survey work would be completed by a private contractor. The water gauges will be installed by seasonal staff. Estimated Cost: \$75,000

4. Acquire and install a shallow well and a solar-powered pump to serve as a supplemental water source for the Ducks Unlimited Wetland Project by 2003 (Figure 15) (High Priority).

The Refuge provides valuable habitat for a variety of migratory bird species. This wetland restoration project, a partnership with Ducks Unlimited, will restore 350 acres of wetland in seven impoundments on the southern portion of the Refuge. Due to wetland drainage in the past and other Refuge water supply needs, it may be necessary to supplement gravity flows of water into the impoundments with pumping from sub-surface water supplies. The Refuge will investigate the feasibility of a shallow well and a solar powered pump will serve as a reliable supplemental water source. The pumps and wells would be installed by private contractors. Estimated Cost: \$80,000



5. Implement disturbance regimes such as prescribed fire to establish and maintain herbaceous cover within savanna, grassland, and other habitat units to support nesting birds and the Karner blue butterflies throughout the life of this CCP (High Priority).

The implementation and maintenance of this habitat represents a significant increase in the Refuge's workload and operating costs. Maintaining barrens habitat is essential for the federally endangered Karner blue butterfly, several species of migratory birds that have recently experienced severe declines, and a diverse variety of other plant and animal species that are not found in closed-canopy savanna. This will be accomplished using Refuge staff. Estimated Cost over 15 years: \$451,000

6. Construct an additional 30 miles of firebreaks around savanna restoration units and along the Refuge's eastern boundary (an area with concentrations of hazardous fuels) by 2010 to allow for periodic fire (High Priority).

The completion and maintenance of 30 miles of adequate firebreaks is necessary for the Refuge's wildfire and prescribed fire management programs. The creation of the firebreaks also serves the safety of the public, especially adjacent landowners, by protecting their structures and other resources from escaped fire. Construction of firebreaks, by additional staff and contractors, will facilitate the access of equipment and suppression of wildfires and prescribed fires.

Estimated Cost: \$160,000

7. Acquire a hydro-axe to maintain openings for migratory birds, resident wildlife, and endangered species by 2002 (High Priority).

Necedah Refuge has nearly 20,000 acres of upland habitat, as well as over 5,000 acres of forested wetland habitat. Both are important for a number of resident, migratory, and endangered species. It is essential that succession be controlled on some of this by setting back the encroachment of willow and other brush and tree species. The use of a hydro-axe would complement the station prescribed burning program and would also be used to a lesser degree to construct and maintain firebreaks. The machine will be operated by additional Refuge staff, and could be shared, at times, with other nearby Refuges. Estimated Cost: \$201,000

8. Acquire an additional pump engine to increase the effectiveness of both prescribed burning and fire suppression activities by 2003 (Medium Priority).

Necedah NWR's important habitats for migratory and native wildlife includes upland and wetland habitats which are dependent upon the use of periodic fires for maintenance. The acquisition of a fire pump unit would increase the effectiveness of both burning and fire suppression activities.

An effective fire suppression capability is needed to protect refuge buildings, structures, the general public, and other resources. There are also many homes adjacent to Refuge boundaries that could need protection. In addition, the pump engine will support the Service's cooperative agreement with the WI DNR to work together in local fire suppression efforts. Estimated Cost: \$108,000

9. Construct a 40' x 70' storage building that can be heated to protect fire management vehicles from the weather by 2005 (Medium Priority)(Figure 15).

The Refuge manages a variety of important habitats which benefit from prescribed fire. These areas are home to federally endangered Karner blue butterflies, rare migratory songbirds, and nesting waterfowl. The Refuge has two fire tank trucks, a fire pump truck, and a fire bulldozer which require a secure storage area that can be heated to prevent water from freezing in winter months. This equipment is vital to the Refuge prescribed fire program, as well as for wildfire suppression. Estimated Cost: \$100,000



10. Complete a rare plant inventory beginning in 2005 and every five years thereafter for the life of this CCP (Medium Priority).

The Refuge has never done a comprehensive inventory of plant species on Refuge lands. Common plants are less likely to be eliminated, therefore, rare plants are priority. Rare plant inventories will be completed on Refuge lands by seasonal staff or a qualified private contractor beginning in 2004 and every five years thereafter for the life of this plan. Estimated Cost: \$15,000

Resource Protection Projects

11. Install a radio repeater to eliminate “dead areas” (Figure 15) and to increase the effectiveness of law enforcement and providing for public and officer safety by 2006 (Medium Priority).

Necedah Refuge encompasses almost 44,000 acres. The need for adequate communication for public and staff safety is critical. With current systems, many portions of the Refuge are “dead” for radio contact. The installation of a radio repeater will increase the range and reliability of radio communications. This will assist primarily law enforcement and public safety efforts. In addition, it will also improve fire management, maintenance, and private lands programs. Estimated Cost: \$62,000

12. Upgrade radio system to meet Federal narrow-band digital standards by 2005 (Medium Priority). Estimated Cost: \$50,000

13. Upgrade patrol vehicles to meet State and Federal emergency vehicle standards by 2003 (Medium Priority). Estimated Cost: \$5,000

14. Acquire voluntary partnership agreements, conservation easements, and fee-title ownerships on approximately 250 acres per year from willing sellers within the Yellow River Focus Area (High Priority)(Figure 11 and 15).

This project will emphasize voluntary private land stewardship agreements, technical assistance, conservation easements, and fee title purchases within the Yellow River Focus Area in order to facilitate restoration and preservation of this. Estimated Cost: \$3,750,000 over 15 years

15. Develop land stewardship and natural history slide presentations for the Yellow River by 2002 (High Priority).

The Yellow River is a high quality example of bottomland hardwood habitat, which is home to a variety of rare species. The area provides ecosystem services, such as flood control and water quality maintenance, that are valuable to human beings as well. The Refuge will develop slide presentations to increase public awareness of the area and to promote land stewardship. Estimated Cost: \$1,000

16 Survey and post all of the Refuge’s conservation easement lands by 2005 (High Priority).

The Refuge holds easements and deed restrictions on over 3,400 acres of land on the Necedah Wildlife Management District. To maintain a responsible stewardship role in the management of this land, it is necessary to have it accurately surveyed and posted. A private contractor will do the surveys, and seasonal staff and/or volunteers will install signs. Estimated Cost: \$450,000



17. Implement active management, according to developed plans, on 50 percent of existing conservation easements by 2010 and on 100 percent of easements by 2015 (Medium Priority).

The U.S. Fish and Wildlife Service has management responsibility for over 3500 acres of conservation easements on the Necedah Wildlife Management District. These easements are protected from development and provide valuable habitat for wildlife. However, they are not actively managed and do not have well-developed land stewardship objectives. Estimated Cost: \$120,000

18. Beginning in 2006, monitor each of the Refuge's easement lands for posting and compliance at least once per year (Medium Priority).

The Necedah Wildlife Management District covers a 17 county area for easement management and private lands assistance. Complete coverage of the District is necessary to check for violations on over 60 Conservation Easements through aerial photography and site visits. This project includes annual contact with each landowner through correspondence and in person. It also includes fencing and posting of easement boundaries. Contacts, inspections, fencing, and posting will be completed by additional Refuge staff, such as a seasonal biological technician and new Refuge law enforcement staff. The aerial photography will be completed by a contractor. Estimated Cost: \$218,000

19. Contract with a cultural resources professional to complete a Cultural Resources Management Plan by 2005 (Low Priority).

A major component should be a geomorphological study of land-forms that could have supported human use and left archeological materials in meaningful context for the prehistoric and proto-historic periods (i.e., the Fort McCoy model). Other components would be the Section 14 and Section 110(a)(2) surveys, analysis of early Refuge facilities such as the dams and water control structures and CCC activities, and a determination if any significant conservation or wildlife activities occurred on the Refuge. Estimated Cost: \$500,000

20. Research and document Refuge water rights and establish baseline water quality standards by the year 2003 (Medium Priority).

The Refuge is an important area for migratory waterfowl and other wetland dependent species. Over 10,000 acres of wetland exist on the Refuge, with plans for restoring more acreage to pre-drainage hydrology. One of the threats to the Refuge is the expansion of the cranberry industry in the Refuge's watershed adjacent to the north Refuge boundary. Documentation of legal water rights is needed to resolve and/or avoid potential future disputes with other water users in the watershed, primarily cranberry growers. Additional research is needed to establish baseline water quality standards also. Research and monitoring will be completed by contractors. Estimated Cost: \$258,000

Monitoring and Studies Projects

21. Complete at least two studies of rare sedge meadow habitat by 2004 (Medium Priority).

Providing and managing wetland habitat for a wide variety of wetland dependent species is priority for the Refuge. Sedge meadows are one habitat present in abundance on the Refuge that is becoming regionally rare. Research may be oriented toward species using sedge meadows,



studying the hydrology of these areas, or analyzing the management of these valuable areas. This research will be completed by a graduate student with staff, volunteer, logistical, and/or monetary support from the Refuge. Estimated Cost: \$20,000

22. Complete baseline inventory and cover type mapping, including a description of plant species composition and relative abundance, litter cover and depth, and height and canopy cover for the Refuge and the lower Yellow River watershed by 2003 (High Priority).

Necedah Refuge and the Yellow River Focus Area comprise over 60,000 acres of important wildlife habitat. To effectively plan and manage these areas, vegetation mapping is essential. This project would be accomplished through the efforts of additional Refuge staff, student interns, contractors, and volunteers. Estimated Cost: \$103,000

Public Education and Recreation Projects

23. Develop an observation tower at Carpenter Field by 2005 (Medium Priority).

The creation of additional viewing locations will allow visitors to experience new places on the Refuge, and new wildlife found in those areas. Estimated cost: \$30,000

24. Develop and maintain at least two new off-road parking areas by 2005 (Low Priority).

Recreational activities such as nature observation, hiking, hunting, and fishing are popular uses of Refuge lands. Additional parking areas will allow visitors easier access to recreational opportunities and will help eliminate safety issues created by hazardous parking. New off-road parking areas will also reduce human impact on roadsides, by concentrating usage onto areas designed to handle such impacts. Estimated Cost: \$5,000

25. Develop a fishing pier at Harvey's Pond (Figure 15) to enhance fishing opportunities by 2005 (Medium Priority).

The fishing facility will allow universal access and enable the public to utilize a great fisheries resource on site. Estimated Cost: \$15,000

26. By 2002, complete the Ellen Allen Outdoor Learning Center (High Priority)(Figure 15).

Necedah National Wildlife Refuge does not have adequate facilities to handle school groups or meetings with more than 20 participants. Construction has begun on an outdoor classroom which will serve as a group project area and meeting area. An old single car garage has been expanded with a 26'x30' addition. The concrete floor and structural shell has been completed. Additional supplies needed to complete the project are siding, storage, decking, heating, and materials for a restroom. The cost for these remaining supplies totals \$12,000. Labor for this project has been supplied by Refuge staff, WCC, and Friends volunteers. Estimated cost: \$12,000

27. Design and print a nature guide, coloring, and activity booklet for elementary students featuring Refuge wildlife and habitats to increase knowledge of and interest in fish, wildlife, plants, and their inter-relationships by 2006 (Medium Priority).

Necedah Refuge is visited annually by several thousand school-aged children as an outdoor classroom. There is a need for Refuge-specific printed materials to educate this group. This project will design and print a nature guide/coloring and activity booklet featuring Refuge wildlife



and habitats. The booklet will be geared toward elementary students to peak their interests in the opportunities offered at the Refuge to view and learn about fish, wildlife, plants, and their inter-relationships. The booklet will be designed by contractors with input from Refuge public use staff and printed commercially. Estimated Cost: \$5,000

28. In partnership with the Wisconsin DNR, develop and install new signage for the Necedah Wildlife Management Area by 2004 (Low Priority).

Visitor awareness of the ownership and management of the Necedah Wildlife Management Area is limited, at best. This project will promote recognition of the identity of the U.S. Fish and Wildlife Service and the relationship between the Service and the Wisconsin Department of Natural Resources. It will also assist visitors in distinguishing between the Refuge proper and adjacent public lands, which have different public use regulations. Estimated Cost: \$20,000

29. Develop five additional miles of recreational/interpretive trails on the Refuge by 2005 (High Priority)(Figure 15).

Necedah NWR is an important wildlife viewing area and destination for nearly 150,000 visitors annually. New trails will enable visitors to enjoy the refuge year-round. The longer trail length will help reach an additional audience currently being overlooked at Necedah. The trails would help reach a segment of visitors interested in a longer visit and a more rigorous tour of the refuge provided by a lengthier hiking trail. This project will provide for the construction of visitor trails (at least one recreational/interpretive trail, approximately 5 miles), parking areas (at least two), and wildlife viewing sites (at least an observation tower at Carpenter Field). These facilities will improve opportunities for visitors and expand options for creating enjoyable educational experiences on the Refuge. Facilities development will be completed by a combination of new seasonal refuge staff and contracted services. Some facilities will be designed for universal accessibility. Estimated Cost: \$55,000

30. Develop and install new interpretative signage, including two interpretive kiosks, boundary signage, and site interpretation signs by 2004 (High Priority).

This CCP has identified a need to update, complete, and create interpretive and informational signage to improve visitors' outdoor experiences. Design and construction of signs will occur through a combination of Regional Office and Refuge public use staff, and private contractors. Signs will be installed by Refuge staff. Estimated Cost: \$112,000

31. In conjunction with the Wisconsin Waterfowl Association, sponsor the Wisconsin Federal Junior Duck Stamp contest yearly for the life of this CCP (Medium Priority).

The Wisconsin Federal Junior Duck Stamp art contest supports appreciation for the importance of wildlife, natural resources, and artistic intelligence and expression. Necedah NWR, in cooperation with the Wisconsin Waterfowl Association, will sponsor the Wisconsin Federal Junior Duck Stamp art contest. Funds will be used for the administration of the program, including the following strategies. Estimated Cost: \$75,000

32. By 2004, in cooperation with other Federal, state, and local partners, design and build a visitor center which will serve as the first point of contact for Refuge visitors, office space for Refuge staff, and classrooms and meeting space for educators (High Priority)(Figure 15).

Located near three major highways, the Refuge attracts thousands of visitors each year. No current space has been set aside to deal with the needs of current or projected visitation.



Additionally, the Refuge has been chosen for the establishment of an experimental population of whooping cranes, which will attract many more visitors from within and outside the area. There is strong support for construction of a visitor center and related public use facilities. The visitor center would be located on Refuge property near Highway 21, be roughly 20,000 square feet in size, and include parking for approximately 20 vehicles. Estimated Cost: \$2,000,000

33. Construct one additional universally accessible fishing pier, hunting blind, and hard surface trail or boardwalk by 2008 (High Priority).

Necedah Refuge attracts nearly 150,000 visitors each year. Several thousand require special accommodations to fully enjoy the Refuge. Facilities and services are needed to better meet the needs of the public. These would include one universally accessible fishing pier, a hunting blind, and a hard surface trail or boardwalk by 2000. These facilities would be planned by new public use staff and contractors. Estimated Cost: \$120,000

34. Provide universally accessible versions of brochures (braille) and videos (close-captioned) by 2004 (Medium Priority).

Necedah Refuge provides services to a diverse group of public, including those that have special needs regarding interpretive materials such as brochures and videos. The Refuge will develop universally accessible versions of brochures (braille) and videos (close-captioned) by 2004. These materials will be planned by new public use staff and contractors. Estimated Cost: \$35,000

Planning And Administration Projects

35. Construct suitable containment facilities for hazardous materials such as petroleum-based products, laboratory supplies, and pesticides by 2004 (Medium Priority).

During the course of managing Necedah Refuge, it is necessary to handle and store some products that have the potential to cause environmental damage or a health hazard. It is necessary to have a storage facility appropriate for such items. This facility will be designed by U.S. Fish and Wildlife Service engineers and constructed by a private contractor. Estimated Cost: \$105,000

36. Maintain and test the Refuge's new drinking water treatment system for the life of this CCP (High Priority)(Figure 15).

The need for safe drinking water for the Refuge for staff and visitors is critical. Funding needed in Operations and Maintenance base funding to complete new requirement for testing the water supply to offer safe drinking water for the public and staff. This project requires baseline testing using four major tests, then subsequent testing at quarterly, annual, three-year, and six-year intervals. Estimated Cost: \$40,000

37. Construct a 50' x 100' storage building to protect vehicles, heavy equipment, and other maintenance implements by 2003 (Medium Priority)(Figure 15).

Necedah Refuge maintains almost 44,000 acres of habitat for a variety of migratory and native resident species. Inclement weather shortens the life span of vehicles and equipment and is increasing maintenance costs. Construction of a 50' x 100' storage building will increase the useful life of vehicles, heavy equipment, and maintenance implements. Estimated Cost: \$60,000

**38. Update the Refuge security system by 2002 (Medium Priority).**

The Refuge has a great deal of valuable equipment that is used for Refuge operations, research, and maintenance. Since there has not been any staff living on the Refuge since 1986. Adequate security for station facilities has been lacking. A updated security system will be installed in all buildings and at other sites, such as dams, where theft or vandalism have a high potential for impacting public safety. The appropriate system will be recommended after an analysis is completed by Refuge law enforcement staff and a private security contractor. Installation and maintenance of the security system will be completed by a private contractor. Estimated Cost: \$57,000

Work Force Projects**39. Hire one additional full-time Private Lands employee by 2002 (Medium Priority).**

Refuge Private Lands personnel get approximately 200 requests from landowners per year for technical and restoration assistance. An average of 30 restorations are completed each year, which leaves a backlog of landowners that current staff are not able to service. Also, landowners in the Yellow River area will require additional staff time. This staff person would assist with the current project backlog and then work primarily with landowners in the Yellow River. Estimated Cost: \$535,000

40. Hire one additional full-time Wage Grade employee by 2005 (Medium Priority).

To improve visitor services and satisfaction, it is necessary to improve and maintain current facilities at a higher standard. Facilities must also be maintained in operable condition in order to meet public expectations. This maintenance will be accomplished through the addition of one Wage Grade employee. Estimated Cost: \$318,000

41. Remodel the Annex Building (Figure 15) to make it suitable housing for volunteers by 2002 (High Priority).

Refuge volunteers contribute invaluable time, innovation and dedication to accomplishing many facets of Refuge operations. There are often volunteers that would come great distances to volunteer, but cannot afford housing. This project would provide housing for these volunteers. Estimated Cost: \$51,000

42. Complete a kit of volunteer recruitment and orientation tools, including a volunteer slide show, volunteer opportunities leaflet, and a list of volunteer recruitment outlets by 2001 (Medium Priority).

Refuge volunteers contribute invaluable time, innovation, and dedication to accomplishing many facets of Refuge operations. Likewise, volunteering for the Refuge can provide people with unique experiences that enrich the quality of their lives. A volunteer slide show and volunteer opportunities leaflet would inform people of volunteer opportunities. A list of volunteer recruitment outlets would assist Refuge employees in reaching a diverse group of potential volunteers. Estimated Cost: \$10,000



2.3 Project Schedule

The following table (Table 8) illustrates annual project funding needs for each of the above projects. Projects in italics indicate recurring base funds.

TABLE 8
ANNUAL PROJECT FUNDING NEEDS

PROJECT	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
HIGH PRIORITY PROJECTS																
41. Remodel Annex Building	51,000															
3. Install staff water gauges		75,000														
4. Install well & solar pump		80,000														
2. Sub-divide Sprague-Mather					292,250	292,250	292,250	292,250								
16. Survey/post easements	112,500	112,500	112,500	112,500												
36. <i>New drinking water system</i>	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666	2,666
5. <i>Disturbance regimes</i>	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066	30,066
7. Acquire hydro-axe	201,000															
22. Complete mapping	51,500	51,500														
26. Ellen Allen Learning Center	12,000															
15. Develop slide presentations	10,000															
29. Develop trails			55,000													
14. <i>Acquire voluntary agreements</i>	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
30. Design/erect 100 signs	66,000	66,000														
6. 30 miles of firebreaks	17,777	17,777	17,777	17,777	17,777	17,777	17,777	17,777	17,777							
33. Accessible fishing pier	40,000			40,000			40,000									
32. Design/build visitor center			2000000													
COST OF HIGH PRIORITY	844,509	685,509	2,468,009	453,009	592,759	592,759	632,759	592,759	300,509	282,732	282,732	282,732	282,732	282,732	282,732	282,732
NUMBER OF PROJECTS	12	9	7	6	5	5	6	5	4	3	3	3	3	3	3	3

TABLE 8
ANNUAL PROJECT FUNDING NEEDS

PROJECT	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MED. PRIORITY PROJECTS																
18. <i>Monitor easements</i>							54,500	54,500	54,500	54,500	54,500	54,500	54,500	54,500	54,500	54,500
11. Install radio repeater				62,000												
12. Upgrade radio system				50,000												
13. Upgrade patrol vehicles	2,500	2,500														
8. Acquire pump engine		108,000														
42. Complete volunteer kit	10,000															
21. 2 sedge meadow studies	5,000	5,000	5,000	5,000												
27. Design/print nature guide					5,000											
25. Develop Fishing Pier		15,000														
10. Rare plant inventory					5,000					5,000					5,000	
23. Develop Observation Tower			30,000													
30. Establish new annual event	9,000			9,000			9,000			9,000			9,000			
9. Construct storage building		60,000														
17. Implement active mgnt.	13,333	13,333	13,333	13,333	13,333	13,333	13,333	13,333	13,333							
20. Research/Doc. water rights	129,000	129,000														
34. Accessible brochures/videos		17,500	17,500													
31. <i>Jr. Duck Stamp contest</i>	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
37. Construct storage building		60,000														
38. Update security system	57,000															

TABLE 8
ANNUAL PROJECT FUNDING NEEDS

PROJECT	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
35. New containment facilities	105,000															
39. Hire FT Pr. Lands employee	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666	35,666
40. Hire FT Wage Gr. employee				31,800	31,800	31,800	31,800	31,800	31,800	31,800	31,800	31,800	31,800	31,800	31,800	31,800
COST OF MED PRIORITY	371,499	450,999	106,499	211,799	95,799	85,799	149,299	140,299	140,299	140,966	126,966	126,966	135,966	126,966	131,966	126,966
NUMBER OF PROJECTS	10	11	6	8	6	4	6	5	5	6	4	4	5	4	5	4
LOW PRIORITY PROJECTS																
24. Create 2 parking areas	5,000															
19. Archaeologist survey	250,000	250,000														
1. Restore 2 wet. complexes					40,500	40,500	40,500	40,500								
28. Develop/install signage	10,000	10,000														
COST OF LOW PRIORITY	265,000	260,000	0	0	40,500	40,500	40,500	40,500	0	0	0	0	0	0	0	0
NUMBER OF PROJECTS	3	2	0	0	1	1	1	1	0	0	0	0	0	0	0	0
GRAND TOTAL COSTS	1,481,008	1,396,508	2,574,508	664,808	729,058	719,058	822,558	773,558	440,808	423,698	409,698	409,698	418,698	409,698	414,698	409,698
GRAND TOTAL NUMBER	25	22	13	14	12	10	13	11	9	9	7	7	8	7	8	7
TOTAL COST ALL YEARS	\$12,497,758															